

69. A control memory according to claim 60, wherein the program is arranged to control light sources which include light sources which emit light with wavelengths corresponding to yellow, cyan and magenta.--

REMARKS

Claim 1, which was rejected under 35 U.S.C. § 102(e) as being anticipated by Takahashi et al. under 35 U.S.C. § 102(e), has been amended in order to make clear that a predetermined light source of the plurality of light sources is turned on and is turned off during a period in which no sensing operation is performed by the image sensing means. The cited patent to Takahashi et al. fails to disclose a "predetermined light source" of a plurality of light sources that is "turned on and is turned off" during a period in which no image sensing operation is performed. Instead, all of Takahashi et al.'s light sources remain on together at all times.

While the Takahashi et al. light sources may be turned off when the device is not in use, they are all turned off together; and when the device is put back into use, the light sources are all turned on together. However, during the periods when no image sensing operation is performed, all

of Takahashi et al.'s light sources remain on. Takahashi et al. expressly say:

"Meanwhile, when the light emitting means continuously emits the plurality of color lights, shield means is arranged between the light emitting means and the subject, the shield means including a rotary shielding plate, for example provided with a slit an rotational control means for controlling the rotation of the rotary shielding plate in synchronization with the light emission of the light emitting means. Accordingly it is not necessary to perform intermittent power-on of the light source of the light emitting means, so that one can use the light source having a low on/of response." (Col. 3, lines 46-57 - emphasis added).

This shows that Takahashi et al. are concerned with the problem of a light source which has a low on/off response. However, Takahashi et al. attempt to solve this problem by keeping the light on at all times. They do not turn it off during times when no image is being sensed. Instead, they keep the light on and mask it during the times that no image is being sensed.

Applicants on the other hand, turn the low response light off when an image is not being sensed; and then they turn the low response light back on during that same period when an image is not being sensed. Then, in spite of the low response time of the light, it has time to come up to full strength by the time the image is being sensed.

In view of the failure of Takahashi et al. to disclose applicant's now claimed light control in which "a predetermined light source of said plurality of light sources is turned on and is turned off during a period in which no sensing operation is performed", and in view of the failure of Takahashi et al. to suggest such control, it is submitted that applicants' claim 1 as now amended patentably distinguishes over Takahashi et al. and is allowable.

The cited patents to Tani et al. (U.S. Patent No. 5,877,487) and Lim et al. (U.S. Patent No. 5,532,825) were not cited against claim 1; and it is apparent that neither of these references, either alone or in combination with Takahashi et al. provide what is missing from that reference, namely the idea of turning on and turning off a low response light during a period in which no image sensing operation is performed by the image sensing means. In view of this, it is submitted that applicants' claim 1, as now presented, patentably distinguishes over all of the references considered both individually and in combination.

Claims 2-13 are all dependent on claim 1 and incorporate the patentably distinguishing features discussed above for that claim. In addition, the specific structures defined by these dependent claims provide additional

advantages, as can be appreciated from the specification, as well as additional novelty; and for these reasons also, claims 2-13 are allowable.

Claim 14, which was also rejected under 35 U.S.C. § 102(e) as being anticipated by Takahashi et al., has been amended in a manner similar to claim 1. Thus, claim 14 now specifies the steps of:

"turning on and turning off a predetermined light source of said plurality of light sources during a period in which no image sensing operation is performed."

It will be seen that claim 14 is a method counterpart of claim 1. Claim 14, like claim 1, patentably distinguishes over Takahashi et al. and the other references because it specifies that the predetermined light source of a plurality of light sources is turned on and is turned off during a period in which no image sensing operation is performed. As discussed above, Takahashi et al. maintain the light sources on at all times; and they rely on a rotating shield to apply light to an image to be sensed. Because Takahashi et al. do not turn the light source off during the times when no image is being sensed, Takahashi et al. do not obtain the power saving that is achieved by applicants' arrangement which turns the light source off when no image is being sensed. For this reason, claim 14 as now presented,

patentably distinguishes over Takahashi et al. and is allowable.

Claims 15-26 are all dependent, either directly or indirectly, on claim 14; and they all incorporate the patentably distinguishing limitations of claim 14. Also, the specific methods defined by these dependent claims provide additional advantages, as can be appreciated from the specification, as well as additional novelty. For these reasons, claims 15-26 patentably distinguish over the references and are allowable.

New claims 27-69 have been added in order to provide a more complete measure of protection for applicants' invention.

New independent claim 27 is directed to a control memory in which is stored a program to perform the steps recited in claim 14. Claim 27 incorporates all of the limitations of claim 14 but limits those steps to a memory which is programmed to carry them out. Thus, claim 27 patentably distinguishes over the references and is allowable for the reasons given above in regard to claim 14.

New claims 28-39 are all dependent on claim 27 and incorporate all of the patentably distinguishing limitations, discussed above, of claim 27. In addition, the specific

structures defined by dependent claims 28-39 provide additional advantages, as can be appreciated from the specification, as well as additional novelty; and for these reasons also, claims 28-39 are allowable.

New claim 40 is directed to an image sensing apparatus in which a light source controlling means controls a plurality of light sources:

"so that a predetermined light source of said plurality of light sources is turned on and another light source of said plurality of light sources is turned off during a period in which an image sensing operation is performed by said image sensing means."

In other words, the "another" light source, which may have a fast response time, is turned off when no image is being sensed, but the predetermined light source, which may have a slow response time, is turned on when no image is being sensed. The significance of this is that the turning off of the "another light source" when an image is not being sensed ensures that minimal driving power is used; and the turning on of the predetermined light source when no image is being sensed ensures that its light will be at full value when the image is being sensed. Thus, when a plurality of light sources are used to sense an image, the full amount of light from the light sources is available during image sensing but the overall power usage is minimized because the

fast response lights are turned off when the image is not being sensed.

Regarding the cited references, Takahashi et al. do not teach the turning on of a particular one of a plurality of light sources and the turning off of another of the plurality of light sources when no image is being sensed. In fact, at Col. 3, lines 46-58 Takahashi et al. discuss the continuous emission of light from all the light sources. It is not seen that Takahashi et al. disclose the turning on of one of a plurality of light sources and the turning off of another of the plurality of light sources during a period when no image sensing operation is being performed, as claimed in new claim 40.

It is submitted that none of the other references supply what is missing from Takahashi et al., namely the turning off of one of a plurality of light sources and the turning on of another of the plurality of light sources when an image is not being sensed. For example Tani et al. (U.S. Patent No. 5,877,487) disclose only turning on red LED's simultaneously with the start of a detecting operation (Column 8, lines 57-60), or when multiple colors are used, turning on the respective LCD simultaneously with the start of an image detecting operation (Column 13, lines 24-28 and

lines 59-62; Column 13, line 67 to Column 14, line 3; Column 14, lines 10-13 and lines 44-48; and Column 15, lines 16-19 and lines 24-28). Lim et al. do not disclose the relative timing of the turning on and off of light sources and the detection or sensing of images. Actually, Lim et al. was cited only as disclosing sequential illumination from a plurality of light sources.

For the foregoing reasons, new claim 40 patentably distinguishes from the cited references and is allowable.

New claims 41-49 are all dependent on claim 40 and patentably distinguish over the references for the same reasons as that claims. Further, the specific structures defined by these dependent claims provide additional advantages, as can be appreciated from the specification, as well as additional novelty; and for these reasons also, dependent claims 41-49 are allowable.

New claims 50-59 are method claims which correspond, respectively, to apparatus claims 40-49. Independent claim 50 specifies an image sensing method which includes the step of:

"controlling said plurality of light sources so that a predetermined light source of said plurality of light sources is turned on and another light source of said plurality of light sources is turned off during a period in

which no image sensing operation is performed by said image sensing means."

As explained above in connection with claim 40, the references provide no disclosure of such an arrangement. Accordingly, claim 50 patentably distinguishes over the references and is allowable.


Claims 51-59 are all dependent on claim 50 and incorporate the patentably distinguishing recitations of claim 50. Further, the specific methods defined by dependent claims 51-59 provide additional advantages, as can be appreciated from the specification, as well as additional novelty; and for these reasons also, claims 51-59 are allowable.

Claims 60-69 are claims to a control memory in which a program for carrying out the steps set for the in claims 50 is stored. Thus, each of claims 60-69 includes the recitations discussed above which patentably distinguish claims 50-59 from the prior art. Accordingly, it is submitted that claims 60-69 are allowable for the reasons given for claims 50-59.

In view of the foregoing, it is submitted that this application is now in condition for allowance. Further consideration by the Examiner and allowance of this application is respectfully requested.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

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